

SECTION 9.80 CONSTRUCTION STAKING

9.80.01--Description: The work under this item shall consist of all construction layout and reference staking necessary for the proper control and satisfactory completion of all work on the project, except property lines, highway lines, or non-access lines.

9.80.02--Materials: All stakes used for control staking shall be of the same quality as used by the Department for this purpose. For slope limits, pavement edges, gutter lines, etc., where so-called "green" or "working" stakes are commonly used, other than standard Department quality stakes will be acceptable. Where laser grade control is used, a reference stake for verifying height of laser shall be required from the Contractor.

9.80.03--Construction Methods: The Department will furnish the Contractor such control points, bench marks, and other data as may be necessary for the construction staking and layout by qualified engineering or surveying personnel as noted elsewhere herein.

The Contractor shall be responsible for the placement and preservation of adequate ties to all control points, whether established by him or found on the project, necessary for the accurate re-establishment of all base lines or center lines shown on the plans.

All stakes, references, and batter boards including original, additional or replacement, which may be required for the construction operations, illumination work, signing and traffic control shall be furnished, set and properly referenced by the Contractor. He shall be solely and completely responsible for the accuracy of the line and grade of all features of the work. Any errors or apparent discrepancies found in previous surveys, plans, specifications or special provisions shall be called to the Engineer's attention by the Contractor for correction or interpretation prior to proceeding with the work.

The Contractor shall provide and maintain for the periods needed, as determined by the Engineer, reference stakes at 30-m intervals outside the slope limits. Further, the Contractor shall provide and maintain reference stakes at 15 m intervals immediately prior to and during the formation of subgrade and the construction of all subsequent pavement layers. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade.

Upon request of the Engineer, the Contractor shall furnish copies of all data used in setting and referencing all stakes and other layout markings used by the Contractor.

When requested by the Engineer, the Contractor shall provide safe facilities for convenient access by Department forces to control points, batter boards, and references.

All staking shall be performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract and who are acceptable to the Engineer. The personnel shall perform this staking under the direct supervision of a person, or persons, of engineering background experienced in the direction of such work and acceptable to the Engineer.

The Department may check the control of the work, as established by the Contractor, at any time as the work progresses. The Contractor will be informed of the results of these checks, but the Department by so doing in no way relieves the Contractor of his responsibility for the accuracy of the layout work. The Contractor shall, at his expense, correct or replace as required any deficient layout and construction work which may be the result of inaccuracies in his staking operations or of his failure to report inaccuracies in his staking operations or of his failure to report inaccuracies found in work done by the Department or by others. If, as a result of these inaccuracies, the Department is required to make further studies, redesign, or both, all expenses incurred by the Department due to such inaccuracies will be deducted from any monies due the Contractor.

The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, transportation, and work incidental to the accurate and satisfactory completion of this work.

For roadways where the existing pavement markings need to be reestablished:

Prior to any resurfacing of the highway or obliteration of existing pavement markings, the Contractor and a representative of the Engineer must establish and document pavement marking control points from the existing markings. These control points shall be used to reestablish the positions of the lanes, the beginnings and endings of tapers, channelization lines for on and off ramps, lane use arrows, stop bars, and any lane transitions in the project area. The Contractor shall use these control points to provide appropriate premarking prior to the installation of the final markings.

The Contractor shall provide and maintain reference stakes and/or markings at 30-meter intervals immediately off the edge of roadway to be used to reestablish the existing pavement markings. The Contractor shall also provide and maintain reference stakes and/or markings at any point on the roadway where there is a change in pavement markings to reestablish the existing pavement markings.

9.80.04--Method of Measurement: Construction staking will be at the Contract lump sum for construction staking.

9.80.05--Basis of Payment: Construction staking will be paid for at the Contract lump sum price for "Construction Staking," which price shall include all materials, tools, equipment, labor and work incidental thereto.

Pay Item	Pay Unit
Construction Staking	L.S.